UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 6
1445 ROSS AVENUE, SUITE 1200
DALLAS TX 75202-2733

July 25, 2018

Clay Patmont
Anchor QEA, LLC
720 Olive Way, Suite 1900
Seattle, WA 98101

RE: San Jacinto River Waste Pits Superfund Site
CERCLA Docket No. 06-02-18
First Phase Pre-Design Investigation Work Plan
Pre-Design Investigation Quality Assurance Project Plan
Pre-Design Investigation Health and Safety Plan

Dear Mr. Patmont,

The Environmental Protection Agency along with other agencies have reviewed the above referenced deliverables. Based on the review, the following comments are provided on the First Phase Pre-Design Investigation Work Plan and Pre-Design Investigation Quality Assurance Project Plan. There are no comments on the Health and Safety Plan.

Please do not hesitate to contact me if you have any questions or would like to schedule a meeting to discuss the comments. You may reach me via email at baumgarten.gary @epa.gov or by phone at 214-665-6749.

Sincerely,

Gary A. Baumgarten
Project Manager

Enclosure

cc: Katie Delbecq, TCEQ
Bob Allen, Harris County
Trae Camble, Port of Houston

First Phase Pre-Design Investigation Work Plan - June 2018
San Jacinto River Waste Pits Superfund Site
Technical Review Comments

General Comments

1. Section 1.2.1 of the First Phase Pre-Design Investigation Work Plan (Work Plan) lists the following data gaps for the Northern Impoundment:
   - Characterization of the wastes in the northern impoundments that are to be removed and disposed of
   - Concentrations of dioxin and furan contamination within the berms of the northern impoundments
   - Geotechnical characteristics of the soils and sediments within and surrounding the northern impoundments
   - Specific yield of the wastes in the northern impoundments; hydraulic conductivity and specific yield of the unconsolidated riverine deposits below the northern impoundments and above the Beaumont clay

   A goal of the Preliminary Design Investigations as described in the Remedial Design AOC Statement of Work (SOW) is to refine the area and volume of material requiring remediation through spatial resolution of surface and subsurface chemical concentration distributions.

   The Work Plan only plans to collect eight samples from the berms within the northern impoundments.

   The information presented in the Work Plan is insufficient to accurately define the full lateral and vertical extent of waste requiring excavation. Based on the information provided on Figure 2-2, there are ten (10) at-depth cores in the northern impoundments. This represents about one core per 1 ½ acre of the northern impoundments.

   The Work Plan should explain the rationale for the number of core sample locations recommended to accurately define the area and volume of material requiring remediation or describe when this information will be collected.

2. The Work plan does not include a schedule for performance of the work; a schedule for the implementing the Work plan shall be included.

3. The Record of Decision requires ground water sampling during the Remedial Design to confirm that there would be no unacceptable impacts to ground water. As stated in the Record of Decision (p. 78), ground water monitoring may not be required for Alternative 6N [the selected remedy], although ground water monitoring will be performed during the Remedial Design. For the Southern Impoundment, ground water monitoring may be required for Alternative 4S [the selected remedy]. The second phase PDI shall include provisions for ground water sampling to confirm that there would be no unacceptable impacts to ground water, and to assess the need for future ground water monitoring.

4. The legends on all figures for the Northern Impoundments needs to be revised to TEQ above and below the 30 ng/kg action level. It is recommended that red, orange and yellow identify concentrations of TEQ above 30 ng/kg and green and blue for concentrations below 30 ng/kg.

Specific Comments

1. **Page 3, Section 1.2.1:** For the Southern Impoundment, the purpose and scope does not include waste characterization. The chemicals in the South Impoundment include benzene and other volatile organic chemicals that are not present in the northern impoundments. This section shall list waste characterization as one of the purposes of the investigation.

2. **Page 3, Section 1.2.2:** The Work Plan states that the results of the first and second phase investigations will be presented in the 30% remedial design documents. The preliminary data shall also be included in the next monthly progress report after the data is available in tabular form with accompanying maps showing the relevant sample locations.

3. **Page 7, Section 2.1.1, 2nd Bullet:** The Work Plan state that the material collected from the impoundments for the remedial investigation did not exhibit any of the hazardous waste characteristics. Please provide a reference for this information.

4. **Page 7, Section 2.1.1.1:** The waste characterization section does not discuss whether the waste material for disposal is a listed hazardous waste. This discussion shall be included.

5. **Page 7, Section 2.1.2:** The Work Plan states:

   During the remedial investigation, sampling to characterize the nature and extent of contamination was focused within the original 1966 perimeter of the northern impoundments; Figure 2-3 presents the locations of all samples collected from 2010 to the present within the original 1966 perimeter of the northern impoundments for analysis of dioxins and furans (Table 2-3 lists all analytes for samples within this area). TEQDF,M concentrations in surface materials collected during the remedial investigation are illustrated in Figure 2-1. Results that describe the depth of dioxin and furan contamination within the original 1966 impoundment perimeter are depicted in Figure 2-2.

   It is unclear what information Figure 2-3 is trying to depict. Just showing all existing sampling locations with one symbol and no labels provides little information. Please update the figure to identify sample location numbers, sample results, etc.

   Table 2-1 rather than Table 2-3 lists all of the analytes for samples within the area.

In addition, Table 2-1 needs to present all the detected concentrations of chemicals (similar to Table 2-3 for physical data) or a disk with this information should be provided with the Work Plan.

6. **Page 8, Section 2.1.3, 2nd Paragraph:** Footnote 1 states that vane shear tests are not relevant to the remedial design. Please explain why vane shear tests are not relevant to the design.

7. **Page 13, Section 2.2.1:** The Work Plan proposes collection of composite samples from two locations in the western cell and one location in the eastern cell, to characterize wastes in the northern impoundments to evaluate disposal options. Given the size of the northern impoundment and the nature of waste material disposed in the impoundments, three composited samples are not adequate to estimate disposal volumes of different classes of wastes.

   It is not clear if additional sampling will be considered during the Phase II PDI. The Work Plan should provide clarification whether future waste characterization sampling is planned for this area or provide an explanation and rationale for the number of waste characterization samples proposed in the Work Plan.

8. **Page 14, Section 2.2.1.3:** The Work Plan states:

   "Knowledge of the type of waste in the northern impoundments and data collected during the remedial investigation demonstrate that the character of the material in the cells is generally consistent throughout the cells (i.e., it is waste from a single paper manufacturing process); therefore, results of TCLP and tests of ignitability, corrosivity, and reactivity for these three additional samples will be representative of northern impoundment waste to be removed for disposal."

   Please provide information from the remedial investigation that supports the above conclusion.

   Although the waste material is from a paper mill, it does not mean that it is uniform. Processes commonly change over time and other waste could have been placed in the area as well.

9. **Page 17, Section 2.2.3.3:** Four locations outside the perimeter of the existing cap are identified for collection of geotechnical samples. According to Figure 2.5, no geotechnical information is available from the area near the eastern edge of the cap where the scouring of the channel was addressed in 2017 or where Figure 35 of the ROD shows the approximate location of the cofferdam.

   One location in the eastern cell seems to be limiting. Waste placement in the eastern cell has been described to be different than in the western cell. As such, it may contain finer and more organic material as one moves further from the center berm discharge point. Material is highest in the middle on the eastern cell on a north-south transect and lowest progressing to the northeast. Due to elevation changes throughout the eastern cell there is a potential for differences in geotechnical properties.

Additional borings from these areas should be included in the Work Plan.

10. **Page 19, Section 2.2.4.3:** This section mentions new data on groundwater quality for the Northern Impoundments collected during the waste disposal profiling. The purpose of the new data is to estimate the quality of produced water during the dewatering required for remedy implementation. However, neither Table 2-5 nor the Work Plan text discusses details of the data collection for groundwater quality. The Work Plan shall include provisions for groundwater quality sampling to inform the dewatering operation in consideration of discharge and/or disposal requirements.

11. **Page 22, Section 3.0:** The Work Plan for the Southern Impoundment does not include a task for waste characterization. While both the North and South Impoundments contain dioxin and furans, the South Impoundment also includes benzene and other volatile organic chemicals that are not present in the Northern Impoundments. The Work Plan shall include a task for waste characterization, with three sample locations distributed across the Southern Impoundment from north to south. Table 2-5 shall also be revised to include this waste characterization investigation.

12. **Page 25, Section 3.2.1 and Figure 3-7:** The Workplan (Figure 3-7) shows the Southern Impoundment former boring locations with a depth weighted average dioxin concentration greater than the 240 ng/kg cleanup level. However, the depth weighted average concentrations for each boring are not shown. The Workplan shall include this information.

13. **Page 25, Section 3.2.1:** The planned borings to refine the area and volume of soils to be removed from the Southern Impoundment are discussed and shown (Figure 3-7). A number, but not all, of the former boings exceeding the cleanup level have four planned new borings for chemistry surrounding the former boring and four new outer edge borings. Additional surrounding and outer edge borings for chemistry shall be added adjacent to the former borings shown below, as follows:
    - B008 and B019: add an additional outer extent boring to the west of each former boring.
    - B012: add an additional surrounding boring to the east of this former boring. The outer extent boring may be drilled and archived now, or it may be drilled in the future if the surrounding east boring is found to exceed the cleanup level.
    - B023: add an addition surrounding boring and an additional outer extent boring to the west of this former boring.
    - B025: add two additional surrounding borings, and two additional outer extent borings, one to the west and one to the south of this former boring.

    Table 2-5 shall also be updated to reflect the new number of borings and samples.

14. **Page 27, Section 3.2.1.3:** Rather than archiving samples for later analyses, all discrete depth interval samples should be analyzed for dioxins/furans.

15. **Figure 2-6:** The "Former Impoundments" label on this figure only indicates the western cell, but not the eastern cell. The figure shall be revised to indicate the total width of the northern impoundments. In addition, the gray color, indicating the approximate location of the waste, does not appear to indicate waste present in the eastern cell. The figure shall be revised to clearly show the presence of waste material in the eastern cell.

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1. **Page 16, Section 2.5.2:** The third sentence of the first full paragraph states:

   Matrix spikes and matrix spike duplicates or laboratory duplicates will not be performed for the analysis of dioxins and furan but will be performed for other analyses at a frequency of 1 for every 20 samples or 1 per extraction batch, whichever is more frequent as applicable.

   Please justify why the matrix spikes and matrix spike duplicates are not being performed for the analysis of dioxins and furan.

2. **Page 18, Section 2.5.3.3:** The first sentence states:

   MDLs are statistically derived and reflect the concentration at which an analyte can be detected in a clean matrix with 99 percent confidence that a false positive result has not been reported.

   The following definition of MDL is provided in 40 CFR Part 136 Appendix B. This definition is referenced in "EPA Contract Laboratory Program (CLP) Statement of Work (SOW) for Organic Superfund Methods, SOM02.3, September 2015 - Exhibit D".

   The method detection limit (MDL) is defined as the minimum concentration of a substance that can be measured and reported with 99% confidence that the analyte concentration is greater than zero and is determined from analysis of a sample in a given matrix containing the analyte.